

Beyond Science Fiction: Building a Real Cognitive Assistant

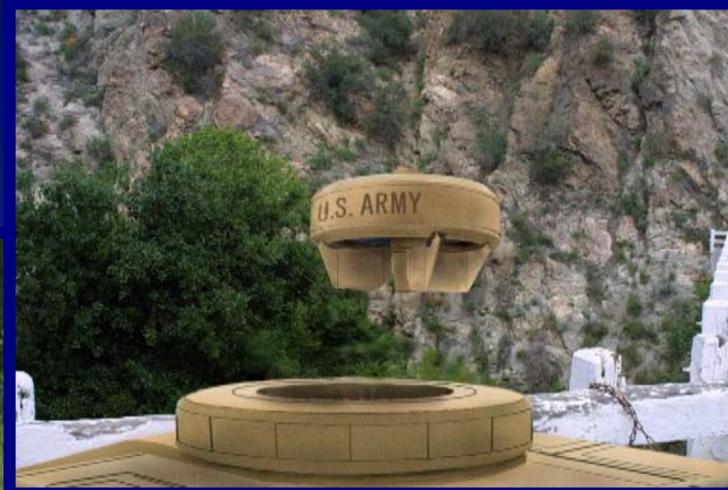
David Gunning



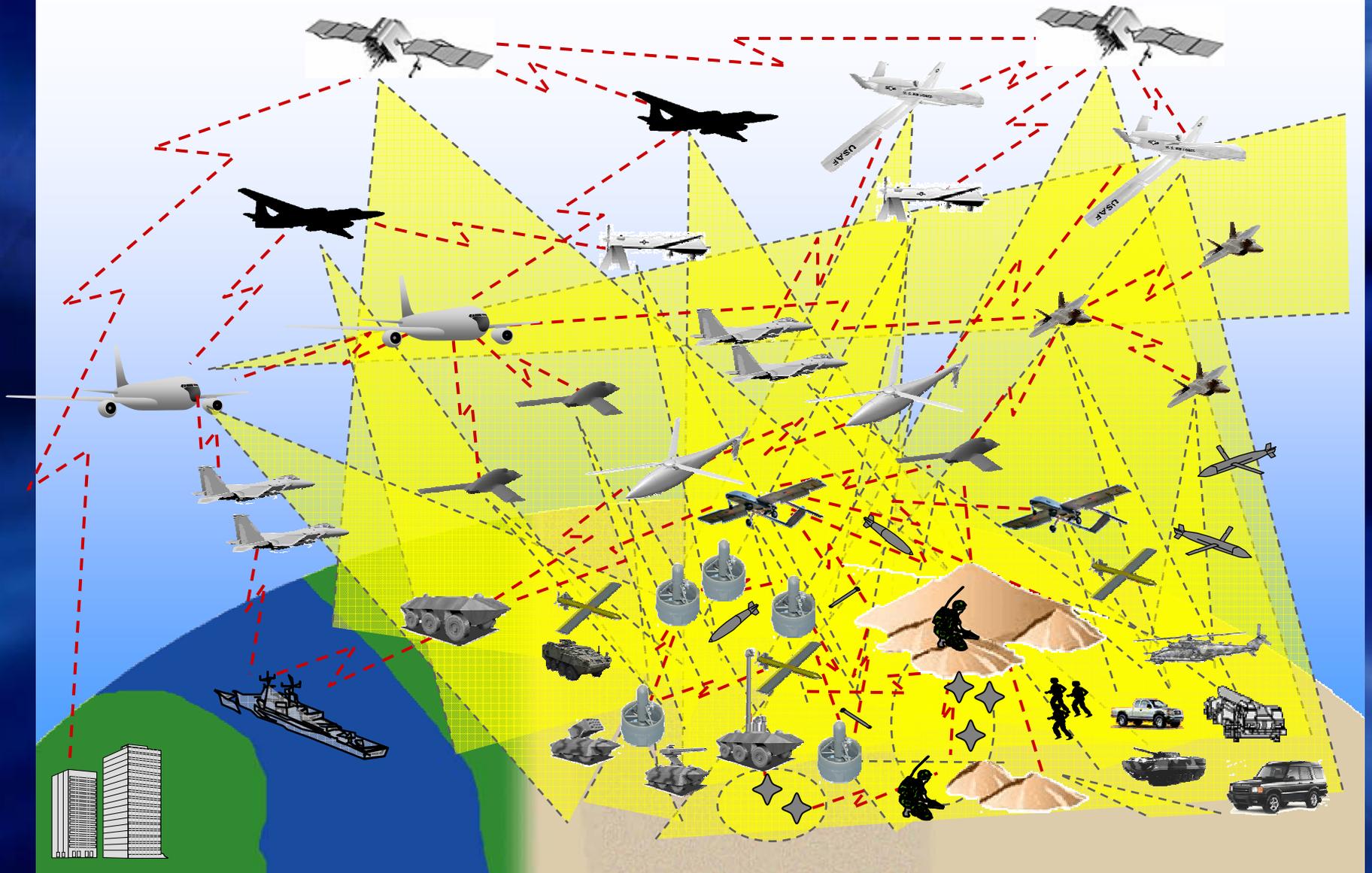
Future Commander



Objective Force

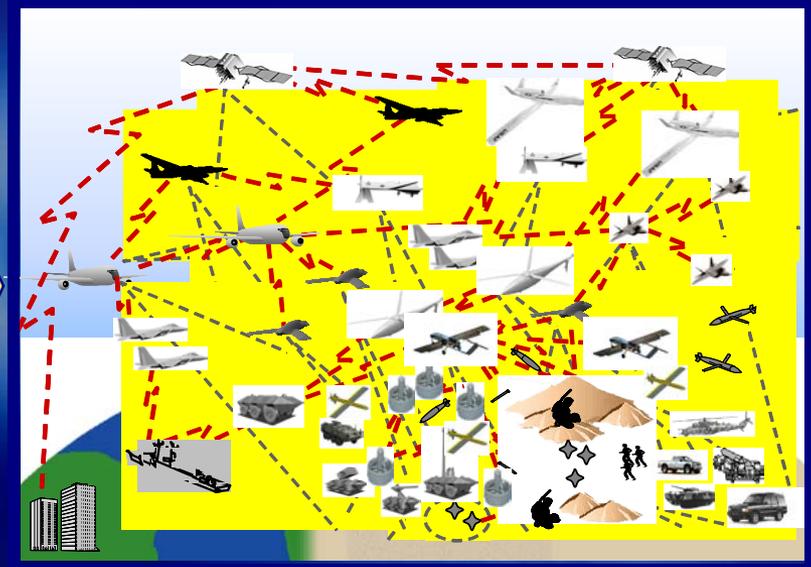


Future Information Environment



THE GAP

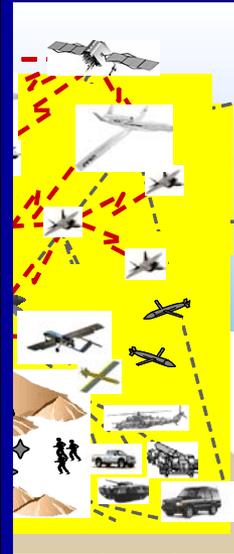
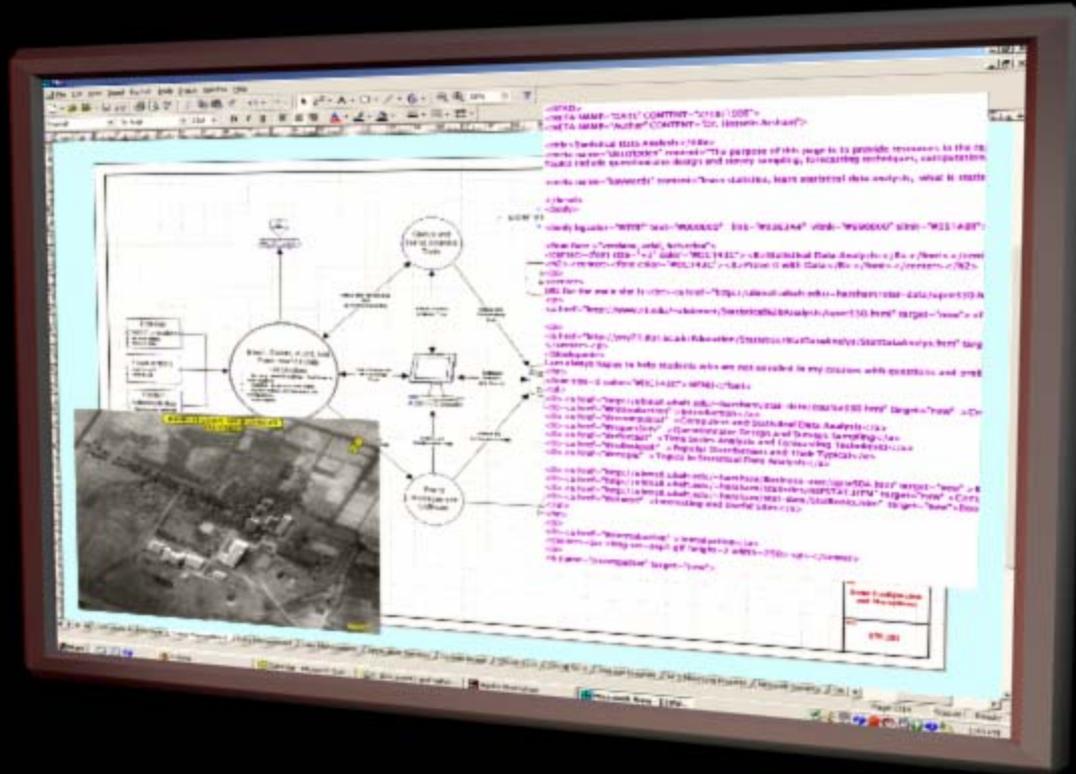
Bridging the Gap?



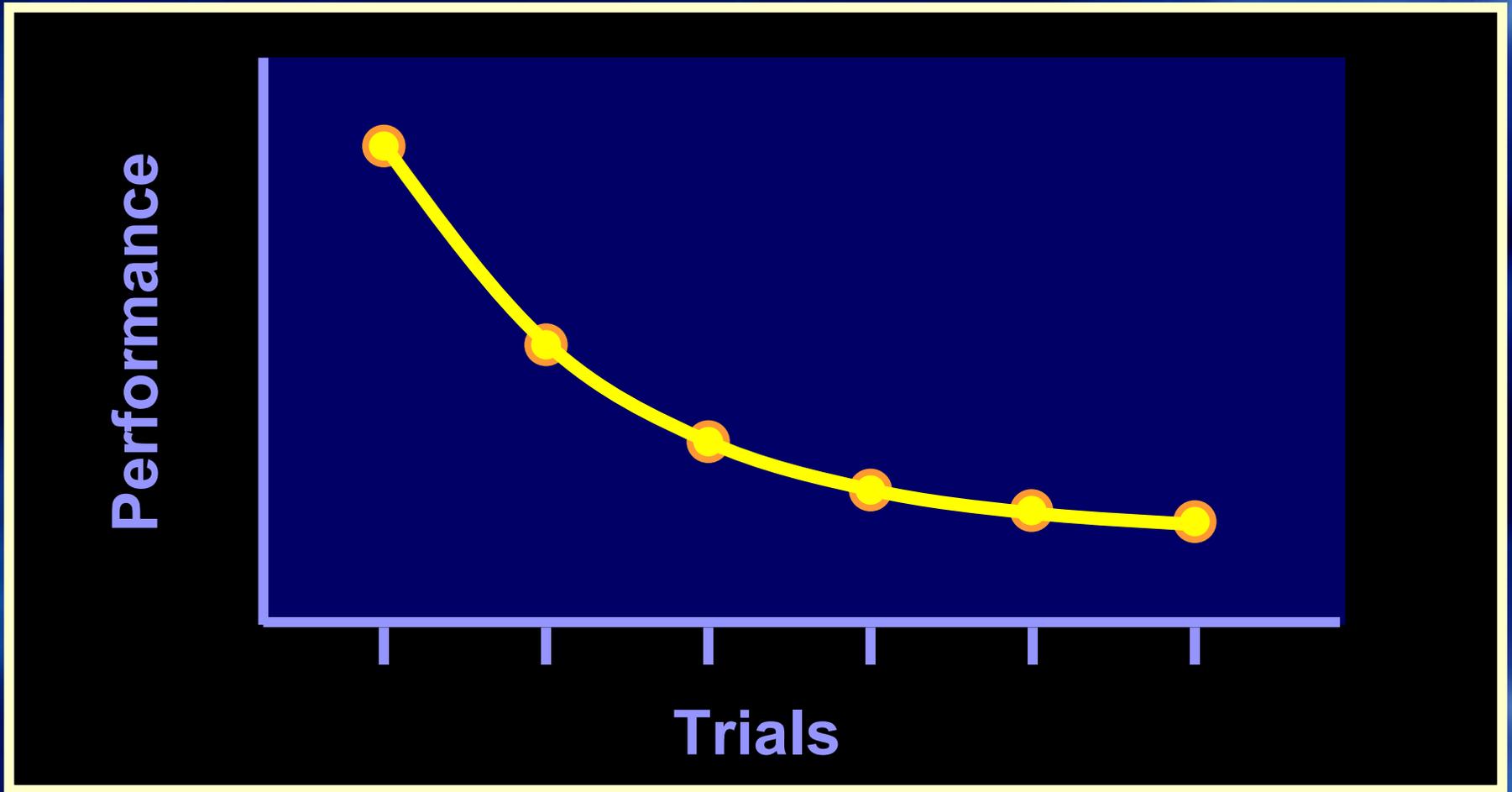
Commander's Assistants Today



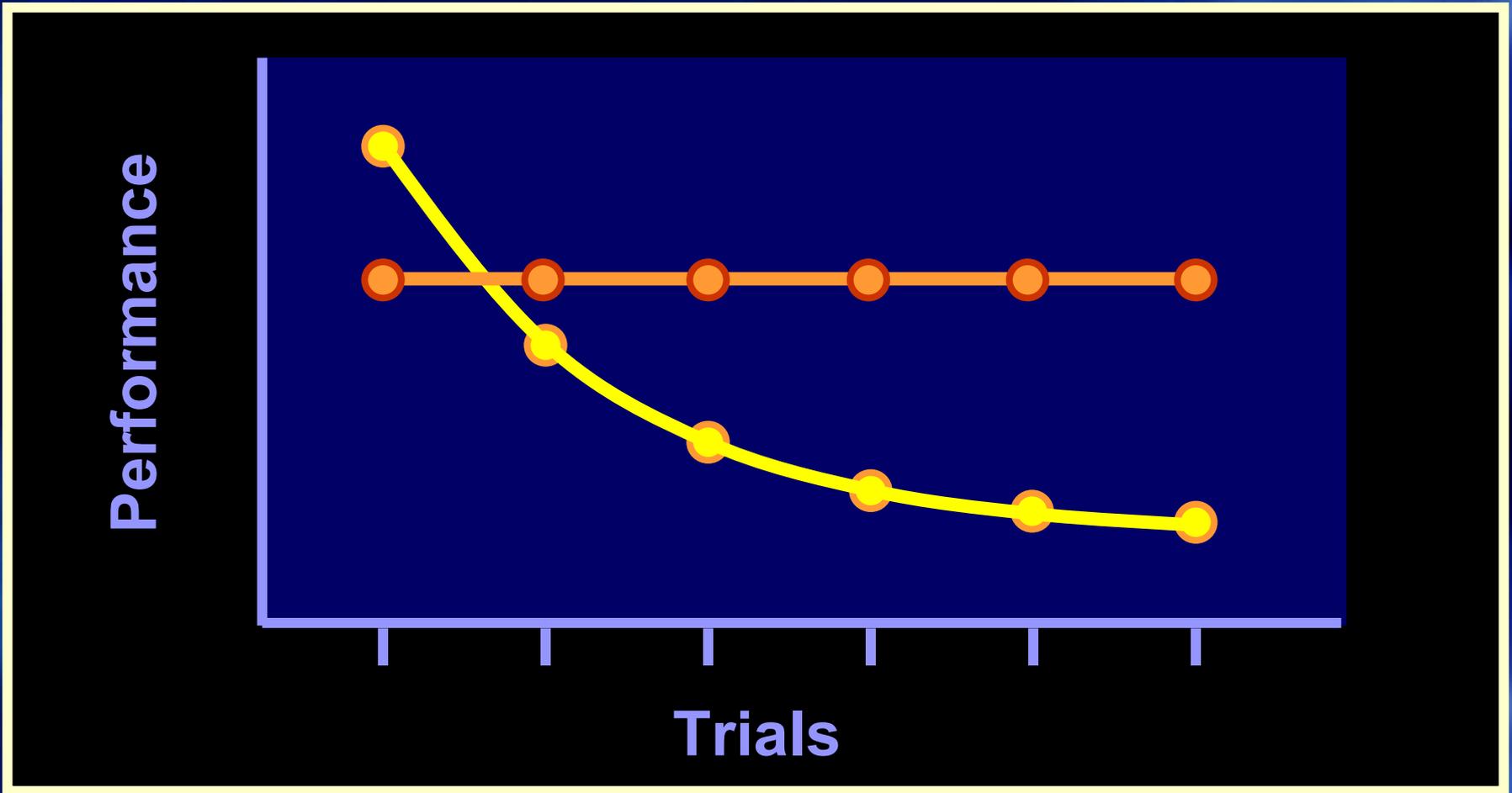
Bridging the Gap?



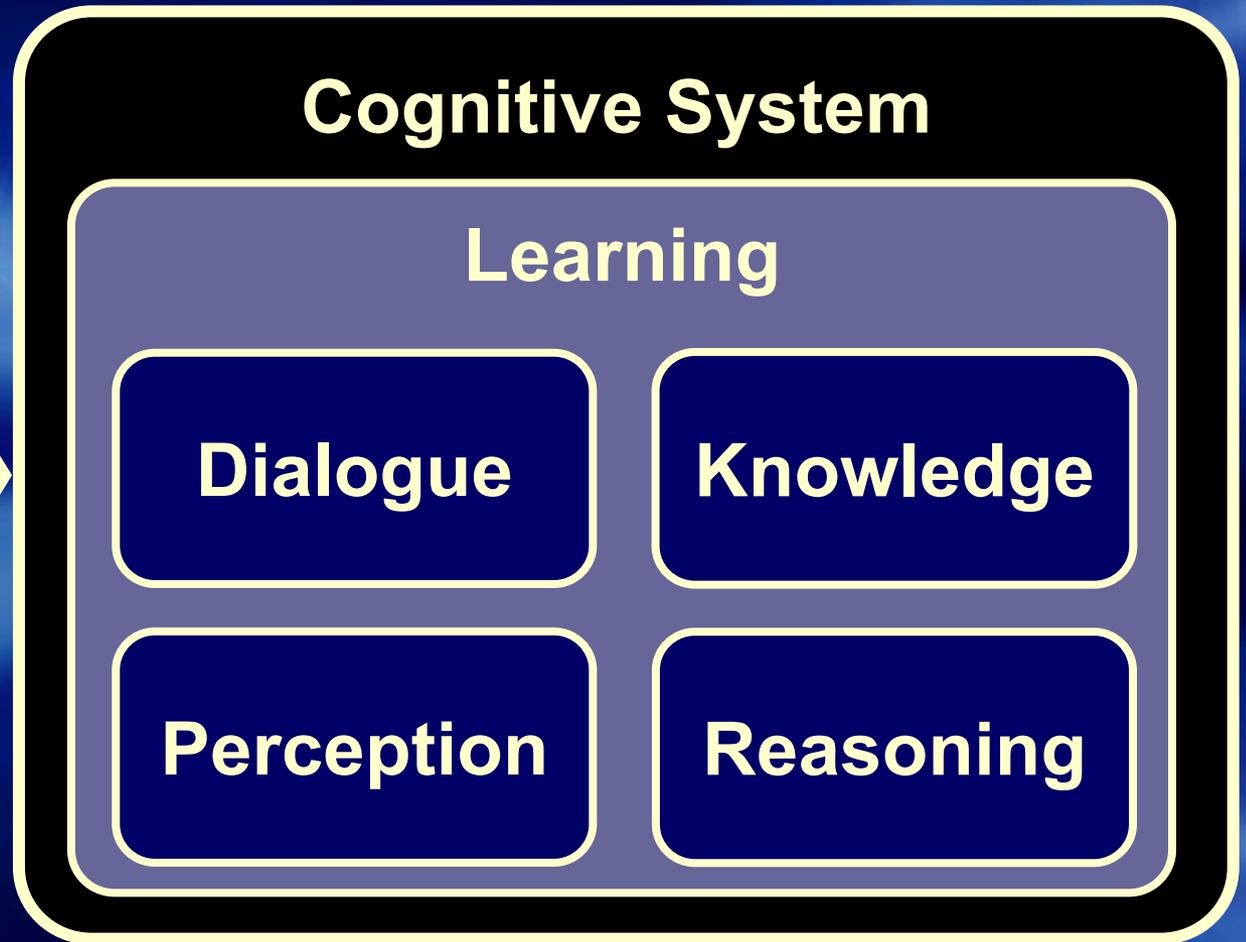
Cognitive Skill Acquisition



Machine Skill Acquisition



Building a Cognitive Assistant

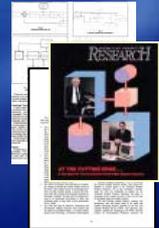


“Science Projects”

Knowledge Representation



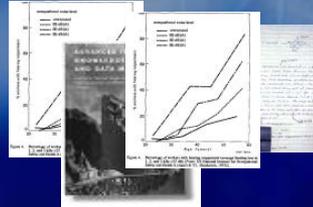
Speech and Language Understanding



Reasoning and Inference



Machine Learning

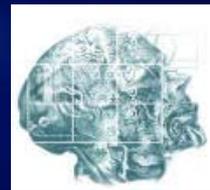


Planning and Scheduling

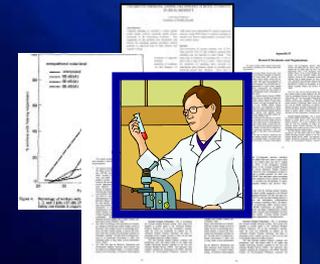
Machine Vision



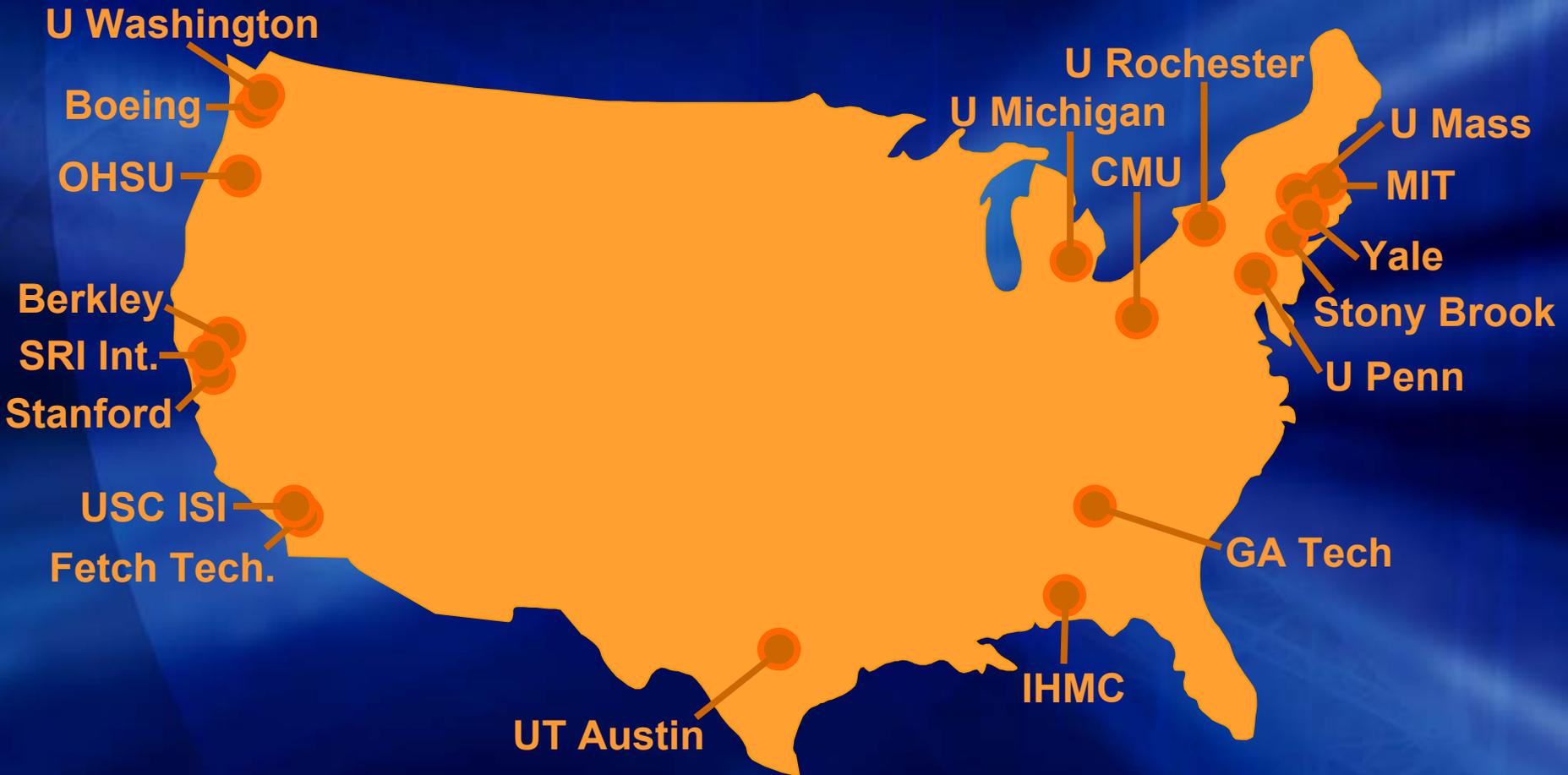
Cognitive Science



Multi-modal Dialogue



SRI International Team



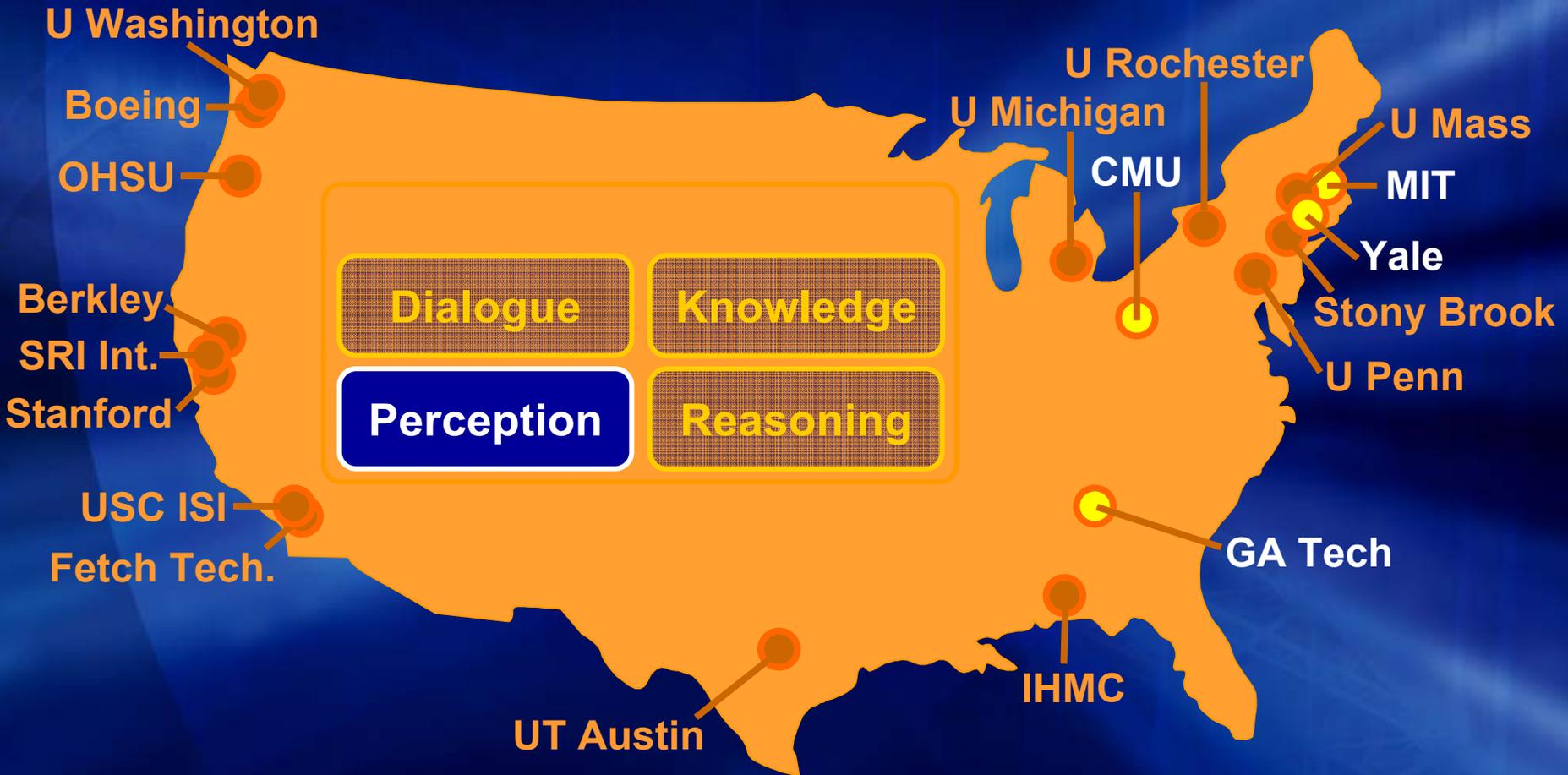
SRI International Team



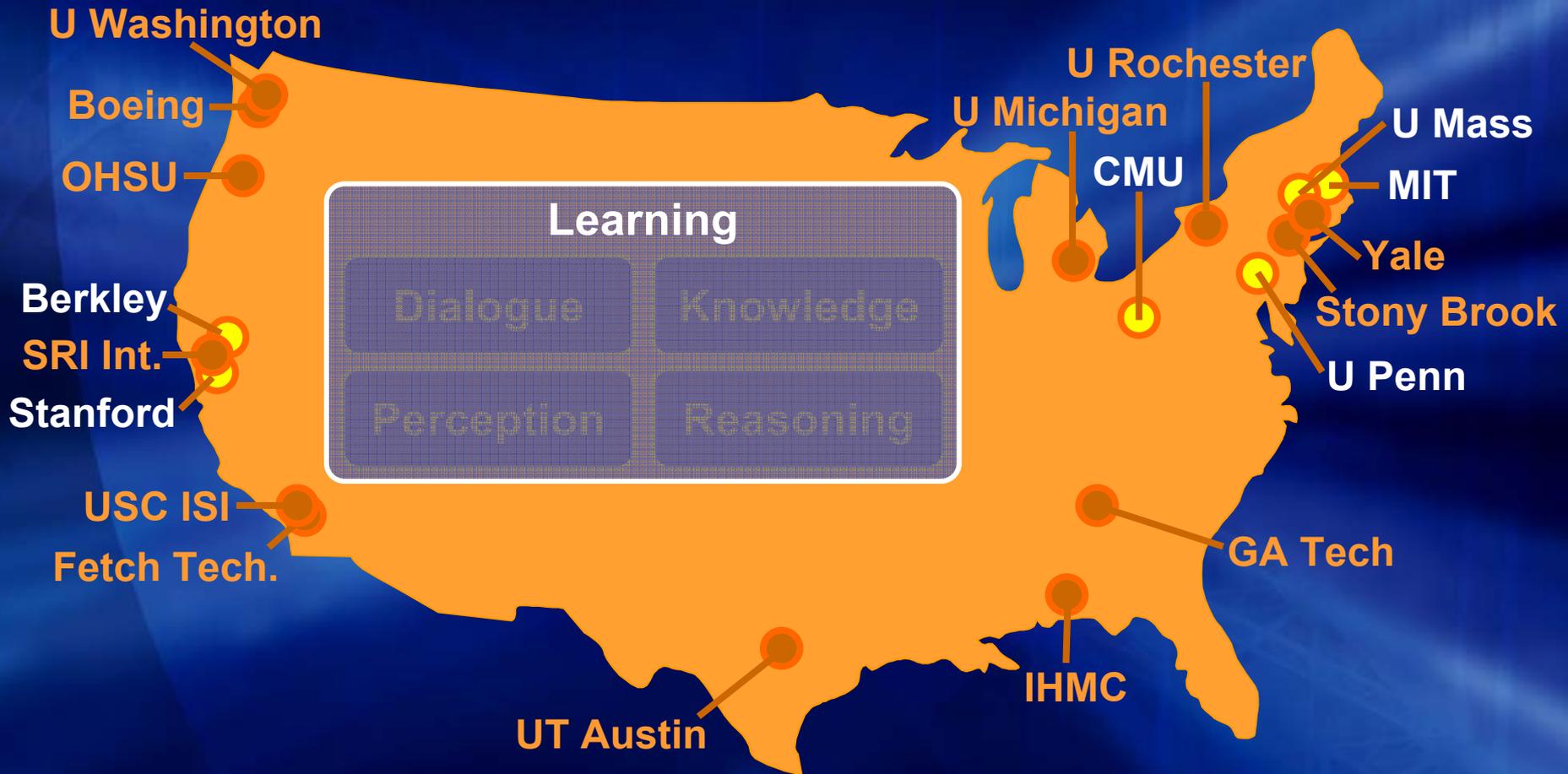
SRI International Team



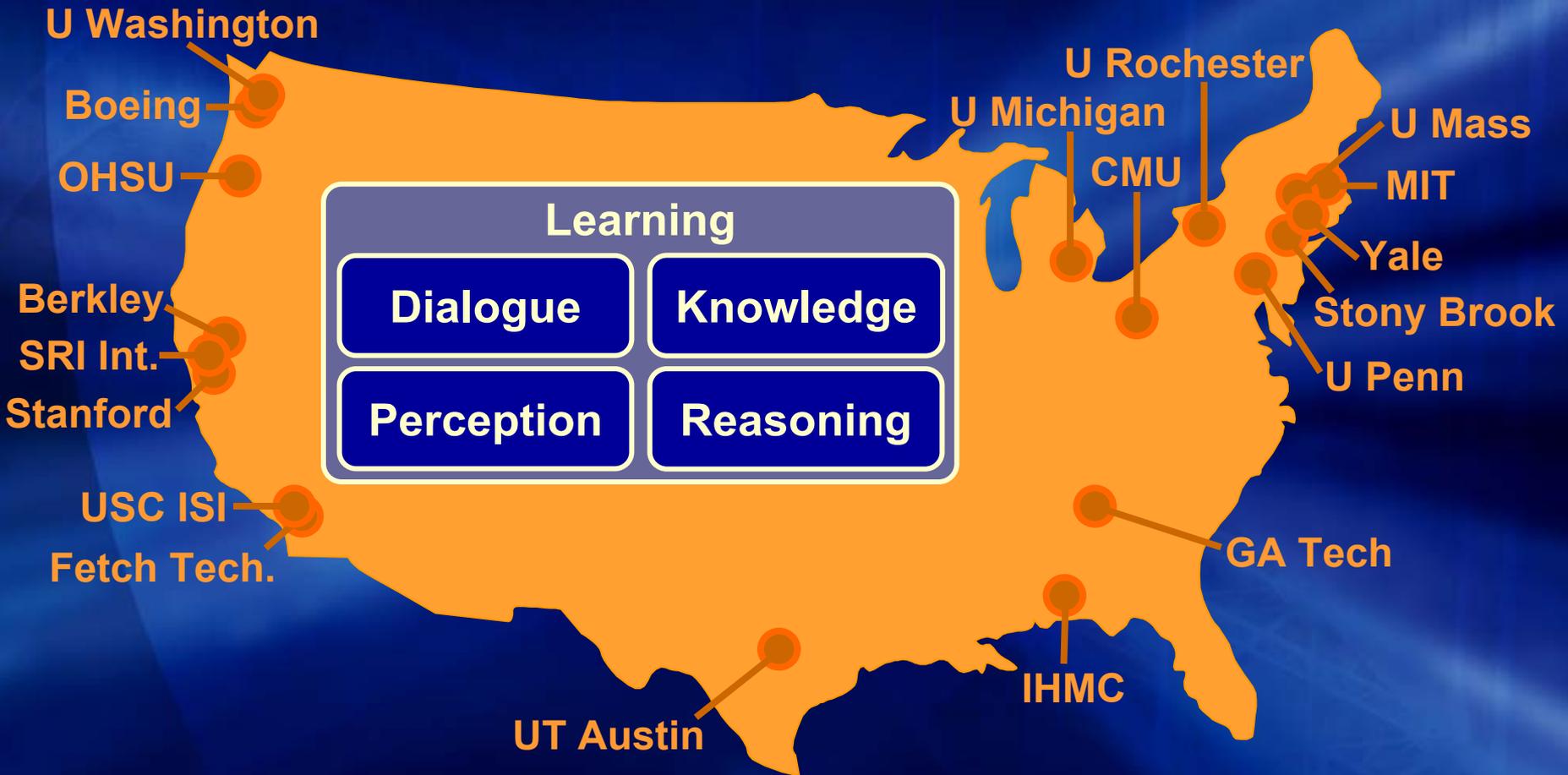
SRI International Team



SRI International Team



SRI International Team



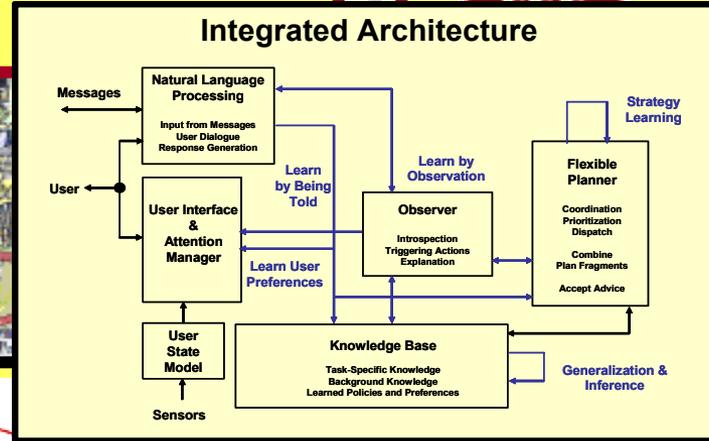
CMU Team



Institute for Software Research



Language Technologies Institute



CALD

Center for Automated Learning and Discovery



Human-Computer Interaction Institute



Carnegie Mellon



New Areas to Explore

- Creating core knowledge
- *A-logical* reasoning techniques
- Reflection and meta-reasoning
- Visual communication
- Novel cognitive architectures

